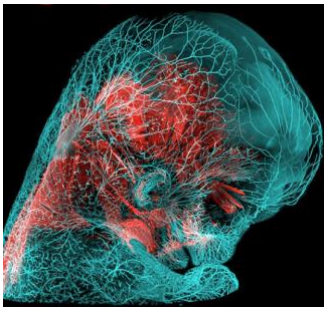
External seminars

Alain Chédotal – Institut de la vision (Paris) and MELIS (Lyon)

Amphi L'Huillier (Physique) – Jan 5th, 11am



Laboratoire de l'invité/Laboratory of the speaker

Institut de la vision (Paris) and MELIS (Lyon)

Invité par/Invited by

Michalis Averof

Date

5/01/2026

Titre de la présentation/Title of the presentation

Development and evolution of visual system connectivity

Résumé/Short abstract

In most vertebrates camera-style eyes contain retinal ganglion cell (RGC) neurons projecting to visual centers on both sides of the brain. However in fish RGCs are thought to only innervate the contralateral side. Using 3D imaging and tissue clearing we found that bilateral visual projections exist in non-teleost fishes. We also demonstrated that distinct developmental programs for visual system laterality between fishes and mammals. We are currently investigating human retinal development during the first trimester using transcriptomics and advanced 3D imaging techniques to map cell lineages and types. This work includes building a comprehensive 3D atlas of the developing oculomotor and eye vasculature systems, which will enhance our understanding of eye diseases and potentially improve replacement cell therapies.

Mini-CV/Short CV

Alain Chédotal did his PhD with Dr Constantino Sotelo at the Salpêtrière Hospital and Pierre et Marie Curie University (currently Sorbonne University). He studied the migration of neurons in mouse embryos and the development of connections between the brain stem and the cerebellum. He then joined Dr. Corey Goodman's laboratory at the University of California at Berkeley (USA) for a post-doctoral fellowship where he contributed to the identification of new receptors involved in

axon guidance and various diseases. Alain Chédotal was recruited at Inserm in 1997 and set up his own team first at the Salpêtrière Hospital, then on the Jussieu campus, before joining the Institut de la Vision in 2008. During his career, Alain Chédotal developped multidisciplinary research accross the fields of Neuroanatomy, Experimental Embryology, Genetics, Cell Biology, Molecular Biology and Imaging. Alain Chédotal has been a member of EMBO since 2019, of the Academia Europaea since 2016 and of the French Academy of sciences since 2017 and was President of the Scientific Council of the Foundation for Medical Research (2020-2022).